

Listing of Claims:

1. (original) A method of generating halftone threshold matrix data for an image printer, said method comprising the steps of:

5 taking a stored high bit content halftone matrix data;

 reducing said high bit content halftone matrix data to a relatively lower bit content halftone matrix data, within said image printer, wherein said step of reduction comprises incorporating a printer response correction function into said relatively low bit content halftone matrix data.

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2. (canceled)

3. (previously presented) A method of generating halftone matrix data having a predetermined response of number of dots printed as a function of digital input value, said method comprising the steps of:

storing data describing a plurality of data elements as a plurality of vector
5 entries, each said vector entry comprising an index number corresponding to a higher bit content per element halftone threshold level, an X coordinate data corresponding to a position in a first dimension, and a Y coordinate data corresponding to a position of said entry in a second dimension, said X and Y coordinate data positioning said index number in a two dimensional plane;

10 storing a tone correction data as a list of numbers;

sequencing through said list of numbers and for each said number of said list, assigning a halftone threshold level to a corresponding number of said vector entries, wherein for each said number of said list, a different said halftone threshold value is assigned; and

15 generating a lower bit content per element two dimensional halftone threshold level matrix from said plurality of vector entries and their corresponding respective assigned halftone threshold levels.

4. (previously presented) The method according to claim 3, wherein said
20 step of generating a two dimensional halftone threshold level matrix further comprises:

for each said vector data entry, storing a threshold level data assigned to said index value in a position within said two dimensional halftone threshold level matrix corresponding to said X and Y coordinates of said vector data entry.

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5. (previously presented) A method of generating halftone threshold data for an image printing system, said method comprising the steps of:

storing a higher bit content threshold level data, comprising a plurality of individual threshold level elements;

5 converting said higher bit content threshold level data into at least one level vector, said level vector comprising a plurality of vector data entries each of an index value number representing a high bit content level value of a halftone threshold level value, and a corresponding coordinate of said threshold level value;

applying a tone correction function by specifying a number of said vector
10 data entries to be selected;

selecting said number of vector data entries from said plurality of vector data entries in said level vector, said selected plurality of vector data entries having highest index numbers, corresponding to highest threshold level numbers of said plurality of vector data entries; and

15 transforming said plurality of selected vector data entries into a lower bit content two dimensional threshold data.

6. (previously presented) The method according to claim 5, wherein said high bit content threshold level data comprises a matrix having 16 bits per
20 element.

7. (previously presented) The method according to claim 5, wherein said low bit content threshold data comprises a plurality of elements each having 8 bits per element.

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8. (previously presented) The method according to claim 5, wherein said high bit content threshold level data further comprises a plurality of two-dimensional planes, wherein a plane of said plurality of two-dimensional planes is provided per each color of an image to be printed.

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9. (previously presented) A method of applying a correction to image data to correct for a printer response characteristic; said method comprising the steps of:

generating a correction characteristic to correct for said printer response
10 characteristic, wherein said printer response characteristic is based on a response characteristic of a printer device;

applying said correction characteristic to a relatively high bit content half tone matrix data, to obtain a relatively low bit content half tone matrix data corrected for said printer response characteristic; and

15 processing said image data using said relatively low bit content half tone matrix data.

10. (previously presented) The method according to claim 9, wherein said step of generating a correction characteristic is carried out automatically by said
20 printer device.

11. (previously presented) The method according to claim 10, wherein said correction characteristic is generated dynamically, and applied to said relatively high bit content half tone matrix in vector format.

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12. (previously presented) A computer readable storage medium on which is embedded one or more computer programs, said one or more computer programs implementing a method of generating halftone threshold matrix data for an image printer, said one or more computer programs comprising a set of
5 instructions for:

taking a stored high bit content halftone matrix data; and

reducing said high bit content halftone matrix data to a relatively lower bit content halftone matrix data, within said image printer, wherein said step of reduction comprises incorporating a printer response correction function into said
10 relatively low bit content halftone matrix data.

13. (previously presented) A computer readable storage medium on which is embedded one or more computer programs, said one or more computer programs implementing a method of generating halftone matrix data having a predetermined response of number of dots printed as a function of digital input value, said one or more computer programs comprising a set of instructions for:

storing data describing a plurality of data elements as a plurality of vector entries, each said vector entry comprising an index number corresponding to a higher bit content per element halftone threshold level, an X coordinate data corresponding to a position in a first dimension, and a Y coordinate data corresponding to a position of said entry in a second dimension, said X and Y coordinate data positioning said index number in a two dimensional plane;

storing a tone correction data as a list of numbers;

sequencing through said list of numbers and for each said number of said list, assigning a halftone threshold level to a corresponding number of said vector entries, wherein for each said number of said list, a different said halftone threshold value is assigned; and

generating a lower bit content per element two dimensional halftone threshold level matrix from said plurality of vector entries and their corresponding respective assigned halftone threshold levels.

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14. (currently amended) The computer readable storage medium according to ~~claim 12~~ claim 13, wherein said set of instructions for generating a two dimensional halftone threshold level matrix further comprises:

for each said vector data entry, storing a threshold level data assigned to
5 said index value in a position within said two dimensional halftone threshold level matrix corresponding to said X and Y coordinates of said vector data entry.

15. (previously presented) A computer readable storage medium on which is embedded one or more computer programs, said one more computer programs
10 implementing a method of generating halftone threshold data for an image printing system, said one or more computer programs comprising a set of instructions for:

storing a higher bit content threshold level data, comprising a plurality of individual threshold level elements;

converting said higher bit content threshold level data into at least one level
15 vector, said level vector comprising a plurality of vector data entries each of an index value number representing a high bit content level value of a halftone threshold level value, and a corresponding coordinate of said threshold level value;

applying a tone correction function by specifying a number of said vector data entries to be selected;

20 selecting said number of vector data entries from said plurality of vector data entries in said level vector, said selected plurality of vector data entries having highest index numbers, corresponding to highest threshold level numbers of said plurality of vector data entries; and

transforming said plurality of selected vector data entries into a lower bit
25 content two dimensional threshold data.

16. (currently amended) The computer readable storage medium according to ~~claim 14~~ claim 15, wherein said set of instructions for high bit content threshold level data comprises a matrix having 16 bits per element.

5 17. (currently amended) The computer readable storage medium according to ~~claim 4~~ claim 15, wherein said set of instructions for low bit content threshold data comprises a plurality of elements each having 8 bits per element.

10 18. (currently amended) The computer readable storage medium according to ~~claim 14~~ claim 15, wherein said set of instructions for high bit content threshold level data further comprises a plurality of two-dimensional planes, wherein a plane of said plurality of two-dimensional planes provided per each color of an image to be printed.

19. (previously presented) A computer readable storage medium on which is embedded one or more computer programs, said one or more computer programs implementing a method of applying a correction to image data to correct for a printer response characteristic; said one or more computer programs
5 comprising a set of instructions for:

generating a correction characteristic to correct for said printer response characteristic, wherein said printer response characteristic is based on a response characteristic of a printer device;

applying said correction characteristic to a relatively high bit content half
10 tone matrix data, to obtain a relatively low bit content half tone matrix data corrected for said printer response characteristic; and

processing said image data using said relatively low bit content halftone matrix data.

15 20. (currently amended) The computer readable storage medium according to ~~claim 18~~ claim 19, wherein said set of instructions for generating a correction characteristic is carried out automatically by said printer device.

20 21. (currently amended) The computer readable storage medium according to ~~claim 19~~ claim 20, wherein said set of instructions for correction characteristic is generated dynamically, and applied to said relatively high bit content half tone matrix in vector format.

22. (previously presented) An image printer system configured to generate a linearized halftone matrix for a printer, said printer system comprising:

a linearisation function;

a high bit half-tone matrix; and

5 a processor configured to compile a linearized half-tone matrix based on said linearisation function and said high bit half-tone matrix.

23. (currently amended) The system according to ~~claim 21~~ claim 22, further comprising:

10 a target response; and

an actual response, wherein said processor is further configured to calculate said linearisation function based on said target response and said actual response.

24. (previously presented) The system according claim 22, wherein said
15 printer is configured to print a calibration patch.

25. (currently amended) The system according to ~~claim 23~~ claim 24, wherein said processor is further configured to determine said actual response based on said calibration patch.

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26. (currently amended) The system according to ~~claim 21~~ claim 22, wherein said printer is further configured to print an image based on said linearized half-tone matrix and data associated with an image.

27. (previously presented) An image printer configured to generate a halftone threshold matrix data, said printer comprising:

a means for taking a stored high bit content halftone matrix data; and

a means for reducing said high bit content halftone matrix data to a
5 relatively lower bit content halftone matrix data, within said printer, wherein said step of reduction comprises incorporating a printer response correction function into said relatively low bit content halftone matrix data.